

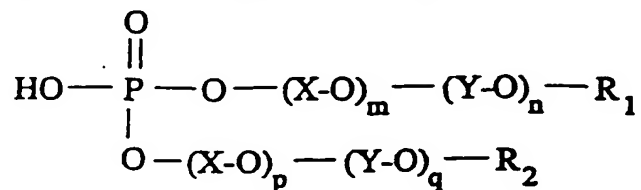
THE FOLLOWING IS THE ENGLISH TRANSLATION OF THE
ANNEXES TO THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT :

AMENDED SHEETS (Pages 35, 36, 37, 38, 39, 40 AND 41).

CLAIMS

1. - Process for treatment of mineral charges characterized in that said charge

a) is treated with at least one treatment agent with the general formula (1):



with R_1 = either H or alkyl with C_8 to C_{40} or aryl or alkylaryl or arylalkyl with C_6 to C_{40} or either H or alkyl with C_8 to C_{40} or aryl or alkylaryl or arylalkyl with C_6 to C_{40}

with R_2 = either alkyl with C_8 to C_{40} or aryl or alkylaryl or arylalkyl with C_6 to C_{40}

$\text{X} = -\text{CH}_2-\text{CH}_2-$ or $-\text{CH}(\text{CH}_3)-\text{CH}_2-$

or $-\text{CH}_2-\text{CH}(\text{CH}_3)-$ or $-(\text{CH}_2)_5-\text{CO}-$

$\text{Y} = -\text{CH}_2-\text{CH}_2-$ or $-\text{CH}(\text{CH}_3)-\text{CH}_2-$

or $-\text{CH}_2-\text{CH}(\text{CH}_3)-$ or $-(\text{CH}_2)_5-\text{CO}-$

X and Y being identical or different,

(m + n) ranging from 0 to 60 (including limits) as well as (p+q)

with $0 \leq m + n \leq 60$ and $0 \leq p + q \leq 60$ when $\text{X} = \text{Y} = -\text{CH}_2-\text{CH}_2-$ and

with $(1 \leq m \leq 10 \text{ and } 1 \leq p \leq 10)$ and $(0 \leq n \leq 59 \text{ and } 0 \leq q \leq 59)$ when X is different from Y

b) undergoes a deagglomeration stage.

2. Process for treatment of mineral charges according to claim 1, characterized in that said charge undergoes a further stage, a selection stage c) following deagglomeration stage b).

3. Process for treatment of mineral charges according to claim 1 or 2, characterized in that said treatment agent is a branched or linear C_8 to C_{20} aliphatic alcohol acid phosphate on which there are condensed from 0 to 12 ethylene oxide motifs.

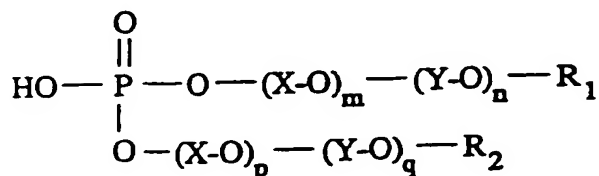
4. Process for treatment of mineral charges according to claim 3, characterized in that said treatment agent comprises a mixture of mono- and diesters.

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5. Process for treatment of mineral charges according to claims 1 to 4, characterized in that said treatment agent is a mixture of decyl alcohol acid phosphate mono- and diester with 5 moles of ethylene oxide.
6. Process for treatment of mineral charges according to claim 1 or 2, characterized in that said treatment agent is tristerylphenol acid phosphate monoester containing 60 moles of ethylene oxide.
7. Process for treatment of mineral charges according to any one of claims 1 to 4, characterized in that said treatment agent is a mixture of ketostearyl alcohol acid phosphate mono- and diester.
8. Process for treatment of mineral charges according to claim 1 or 2, characterized in that said treatment agent is a mixture of nonylphenol acid phosphate mono- and diester containing 10 moles of ethylene oxide.
9. Process for treatment of mineral charges according to claim 1 or 2, characterized in that said treatment is performed by the dry method or by the wet method.
10. Process for treatment of mineral charges according to any one of claims 1 to 9, characterized in that said charge is selected from among: natural or synthetic alkaline-earth carbonates, phosphates and sulfates, zinc carbonate, mixed salts of magnesium and calcium, dolomites, lime, magnesia, barium sulfate, calcium sulfates, magnesium and aluminum hydroxides, silica, wollastonite, clays and other silico-aluminous materials, kaolins, silico-magnesians, talc, mica, solid or hollow glass balls, metal oxides, zinc oxides, iron oxides, titanium oxide and mixtures thereof.
11. Process for treatment of mineral charges according to claim 10, characterized in that said charge is selected from among: natural calcium carbonates selected from among chalk, calcite and marble, precipitated calcium carbonate, dolomite, aluminum or magnesium hydroxides, kaolin, talc, wollastonite and mixtures thereof.

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12. Treated mineral charge, with a particular grain-size measurement, for the manufacture of polyurethane foams, by a process according to which said charge is mixed with at least one part of the polyol of the reaction forming the polyurethane, and having a shorter mixing time with the polyol and the other reagents, characterized in that it
- a) is treated with at least one compound of the general formula (1):



with R_1 = either H or alkyl with C_8 to C_{40} or aryl or alkylaryl or arylalkyl with C_6 to C_{40}

with R_2 = either alkyl with C_8 to C_{40} or aryl or alkylaryl or arylalkyl with C_6 to C_{40}

$\text{X} = -\text{CH}_2-\text{CH}_2-$ or $-\text{CH}(\text{CH}_3)-\text{CH}_2-$

or $-\text{CH}_2-\text{CH}(\text{CH}_3)-$ or $-(\text{CH}_2)_5-\text{CO}-$

$\text{Y} = -\text{CH}_2-\text{CH}_2-$ or $-\text{CH}(\text{CH}_3)-\text{CH}_2-$

or $-\text{CH}_2-\text{CH}(\text{CH}_3)-$ or $-(\text{CH}_2)_5-\text{CO}-$

X and Y being identical or different,

(m + n) ranges from 0 to 60 (including limits) as well as (p + q)

with $0 \leq m + n \leq 60$ and $0 \leq p + q \leq 60$ when $\text{X} = \text{Y} = -\text{CH}_2-\text{CH}_2-$ and

with $(1 \leq m \leq 10 \text{ and } 1 \leq p \leq 10)$ and $(0 \leq n \leq 59 \text{ and } 0 \leq q \leq 59)$ when X is different from Y

- b) undergoes a deagglomeration stage and
- c) possibly undergoes a selection stage.

13. Treated mineral charge, according to claim 12, characterized in that said treatment agent comprises a mixture of mono- and diester.
14. Treated mineral charge, according to claim 12 or 13, characterized in that said treatment agent is a mixture of decyl alcohol acid phosphate mono- and diester with 5 moles of ethylene oxide.
15. Treated mineral charge, according to claim 12, characterized in that said treatment agent is the monoester of tristyrylphenol acid phosphate containing 60 moles of ethylene oxide.

16. Treated mineral charge, according to claim 12 or 13, characterized in that said treatment agent is a mixture of ketostearyl alcohol acid phosphate mono- and diester.
17. Treated mineral charge, according to claim 12 or 13, characterized in that said treatment agent is a mixture of nonylphenol acid phosphate mono- and diester containing 10 moles of ethylene oxide.
18. Treated mineral charges according to any one of claims 12 to 17, characterized in that the charges to be treated are selected from among natural or synthetic alkaline-earth carbonates, phosphates and sulfates, zinc carbonate, mixed salts of magnesium and calcium, dolomites, lime, magnesia, barium sulfate, calcium sulfates, magnesium and aluminum hydroxides, silica, wollastonite, clays and other silico-aluminous materials, kaolins, silico-magnesians, talc, mica, solid or hollow glass balls, metal oxides, zinc oxide, iron oxides, titanium oxide and mixtures thereof.
19. Treated mineral charges according to any one of claims 12 to 17, characterized in that the charges to be treated are selected from among natural calcium carbonates selected from among chalk, calcite and marble, precipitated calcium carbonate, dolomite, aluminum or magnesium hydroxides, kaolin, talc, wollastonite and mixtures thereof.
20. Treated mineral charges according to any one of claims 12 to 19, characterized in that they consist of products with a mean diameter ranging between 0.1 and 15 micrometers.
21. Treated mineral charges according to any one of claims 12 to 19, characterized in that they consist of products with a mean diameter ranging between 0.1 and 10 micrometers.
22. Treated mineral charges according to any one of claims 12 to 19, characterized in that they consist of products with a mean diameter ranging between 0.3 and 8 micrometers.

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23. Treated mineral charges according to any one of claims 12 to 22, characterized in that the charges are selected from among the following: a marble with mean diameter 8 micrometers, a magnesium hydroxide with mean diameter ranging between 1.4 and 1.8 micrometers, a talc with mean diameter 2.5 micrometers, a dolomite with mean diameter 3 micrometers, an aluminum hydroxide with mean diameter 0.8 micrometer, a kaolin with mean diameter 0.5 micrometer, a precipitated calcium carbonate with mean diameter 0.30 micrometer.
24. Treated mineral charges according to any one of claims 12 to 23, characterized in that they retain their hydrophily while having a polyol intake reduced by at least 15% and preferably by at least 20% as compared with the untreated mineral charge.
25. Mineral-charge suspensions in polyols, characterized in that the charge is a charge according to any one of claims 12 to 24.
26. Mineral-charge suspensions in polyols, according to claim 25, characterized in that the polyols used belong to the families of polyethers and polyesters-polyethers, and polyesters, among the polyol polyethers, the products of addition of propylene oxide to a simple polyol, glycol, glycerol, trimethylopropane, sorbitol, with or without the presence of ethylene oxide or special polyol polyethers, amine-based polyethers, obtained by addition of propylene oxide or possibly of ethylene oxide to amines, halogenated polyethers, graft polyethers resulting from the copolymerization of styrene and acrylonitrile in suspension in a polyether, or else polytetramethyleneglycol, among the polyol polyesters, those resulting from the polycondensation of polyalcohols on polyacids or their anhydrides, diacids, adipic, phthalic or other acids, reacting with diols, ethylene glycol, propylene glycol, butylene glycol, or others, triols, glycerol, trimethylopropane or others and tetrols, pentaerythritol or others, alone or in mixture or various hydroxylated compounds, hydroxylated polybutadienes, prepolymers with hydroxyl terminations resulting from the reaction of an excess of polyol on a diisocyanate or else simple polyols, glycerol, aminoalcohols utilized in small quantity with polyol polyethers or polyol polyesters.

27. Mineral-charge suspensions in polyols, according to claim 25 or 26, characterized in that they contain other inorganic and/or organic products such as catalysts and/or antioxidants.
28. Mineral-charge suspensions in polyols for the manufacture of flexible, semi-rigid or rigid polyurethane foams, according to any one of claims 25 to 27, characterized in that the concentration of dry matter in the treated mineral materials may reach 80% by weight, and in that they do not undergo a redhibitory decantation, or sedimentation, or thickening after undisturbed storage for 7 days; that is, they possess a stable Brookfield apparent viscosity lower than that of untreated mineral-charge suspensions and in that they contain 0.5% to 3% by weight, in relation to the weight of the mineral charge, of at least one treatment agent with the general formula (1).
29. Premixtures of mineral charges with a polyol, and in particular in the proportions suited to the manufacture of polyurethanes, and more particularly polyurethane foams either by foaming without an auxiliary inflation agent, or by foaming with an auxiliary inflation agent such as methylene chloride, acetone or CO₂, or composite polyurethanes, characterized in that the charges are pretreated with a process according to any one of claims 1 to 11.
30. Premixtures of mineral charges with a polyol according to claim 29, characterized in that the charge consists of a charge such as described in any one of claims 12 to 22, selected from among natural calcium carbonates selected from among chalk, calcite and marble, precipitated calcium carbonate, dolomite, aluminum or magnesium hydroxides, kaolin, talc, wollastonite and mixtures thereof.
31. Utilizations of premixtures of mineral charge and polyol according to claims 29 or 30 in the manufacture of flexible, semi-rigid or rigid polyurethane foams, with the process either by foaming without an auxiliary inflation agent, or by foaming with an auxiliary inflation agent selected from among methylene chloride, acetone or CO₂ or others, and for the manufacture of composite polyurethanes.

32. Utilizations of premixtures of mineral charge and polyol according to claim 29 for 30 in the manufacture of composite materials with a matrix of polyurethane, cellular or otherwise.
 33. Utilizations of premixtures of mineral charge and polyol according to claim 32, characterized in that the materials are polyurethanes reinforced with vegetable or glass or quartz fibers or synthetic fibers, in general cut fibers, or similar.
 34. Utilizations of premixtures of mineral charge and polyol according to claim 32 or 33, in the field of components for the automobile industry, for the transport, road or railway sector, and industrial components for various applications.
 35. Flexible, semi-rigid or rigid polyurethane foams obtained with the process either by foaming without an auxiliary inflation agent, or by foaming with an auxiliary inflation agent selected from among methylene chloride, acetone or CO₂ or others, characterized in that they incorporate a pretreated charge according to any one of claims 12 to 24.
 36. Composite polyurethanes, cellular or otherwise, characterized in that they incorporate a pretreated charge according to any one of claims 12 to 24.
 37. Molded or non-molded articles characterized in that they are obtained from foams and composite polyurethanes obtained according to claim 35 or 36.
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